

**B.TECH. CIVIL ENGINEERING
(BTCEVI)**

Term-End Examination

December, 2013

**BICEE-024 : ADVANCED ENVIRONMENTAL
ENGINEERING**

Time : 3 hours

Maximum Marks : 70

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- Note :* (i) *Answer any seven question.*
(ii) *All question carry equal marks.*
(iii) *Assume any suitable data if missing.*
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1. With a neat sketch, explain Deoxygenation, Reaeration and Oxygen sag curve. **10**
2. Discuss in brief the various disinfection process.
What is break point chlorination ? **7+3=10**
3. Write short notes on **any two** : **5x2=10**
 - (a) Removal of taste and odour through pre chlorination.
 - (b) Self purification of stream
 - (c) Merits and demerits of microfilters.
4. Describe the specification and operation of Activated sludge process. **10**
5. Why is tertiary treatment required for STP ?
Discuss any two types of tertiary units. **6+4=10**

6. Compare the difference between aerobic and anaerobic based secondary biological treatment with respect to sludge product and gases effluent. 10
7. Explain the three principles of air pollution control for automobiles or chimneys. 10
8. What is noise ? Discuss its effects and control measures. 2+8=10
9. Design an activated sludge process unit treatment for a town of 65,000 with the following waste water characteristics : 10
average sewage flow=210 lcd
BOD = 210 mg/L
TSS = 300 mg/L
BOD removal in PST = 40%
Overall BOD removal desired = 90%
10. The sewage discharge of a city is 85 l/sec in the river having minimum discharge of 930 l/s with a velocity of 0.12 m/sec. The BOD @ 20°C of sewage is 325 mg/l while river BOD = 0. Determine the quantity and point of critical D.O. deficit. 10
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